WHAT IS CLAIMED IS:

1. A heat exchange device comprising a heat source for receiving thermal energy and a first heat dissipating fin for dissipating the thermal energy, wherein the sides of the first fin have the approximate shape of a circular arc.

2. The heat exchange device according to claim 1, wherein the sides of the first fin are defined by the expression $\left(x-\frac{1}{\gamma}\right)^2+\left(y-\frac{\rho}{\gamma}\right)^2=\frac{1}{\gamma^2}$, where $\gamma=\frac{h}{k}$ and $\rho=\frac{q_o}{k\theta_o}$.

3. The heat exchange device according to claim 1, wherein the cross-sectional dimensions of the first fin are defined by its base according to the semi-height dimension, y_o, a first arcuate side and a second arcuate side according to radius R, arc length dimension S, and length L, determined by the expressions $y_o=\frac{\rho}{\gamma}$, R = $\frac{1}{\gamma}$, $S=\frac{\sin^{-1}\rho}{\gamma}$, and $L=\frac{1}{\gamma}\left(1-\sqrt{1-\rho^2}\right)$.

4. The heat exchange device according to claim 1, wherein the first fin is substantially straight over its width dimension.

5. The heat exchange device according to claim 1, wherein the first fin is solid.

6. The heat exchange device according to claim 1, wherein the heat source and the first fin are homogeneous.

7. The heat exchange device according to claim 1, wherein a portion of the first fin is not attached to the heat source.

8. The heat exchange device according to claim 1, wherein the thermal energy is produced within a system and dissipated out of the system.

9. The heat exchange device according to claim 8, wherein the system includes a heat-generating electronic device.

10. The heat exchange device according to claim 1, wherein the thermal energy is transferred to a fluid surrounding the first fin.

11. The heat exchange device according to claim 10, wherein the fluid is moved relative to the first fin using forced convection means.

12. The heat exchange device according to claim 1, further comprising a second heat dissipating fin arrayed with the first fin for dissipating the thermal energy, wherein the sides of the second fin have the shape of a circular arc.

13. A heat dissipating fin comprising:

a longitudinally-extending base portion,

a first longitudinally-extending approximately circular side, and

a second longitudinally-extending approximately circular side,

wherein thermal energy received in the base portion is dissipated from the outer surfaces of the first and second circular sides.

14. The fin according to claim 13, wherein the sides are defined by the expression $\left(x-\frac{1}{\gamma}\right)^2+\left(y-\frac{\rho}{\gamma}\right)^2=\frac{1}{\gamma^2}$, where $\gamma=\frac{h}{k}$ and $\rho=\frac{q_o}{k\theta_o}$.

15. The fin according to claim 13, wherein the cross-sectional dimensions of the fin are defined by its base according to the semi-height dimension, y_o, a first arcuate side and a second arcuate side according to radius R, arc length dimension S, and length L, determined by the expressions $y_o=\frac{\rho}{\gamma}$, $R=\frac{1}{\gamma}$, $S=\frac{\sin^{-1}\rho}{\gamma}$, and $L=\frac{1}{\gamma}\left(1-\sqrt{1-\rho^2}\right)$, wherein $\gamma=\frac{h}{k}$, and $\rho=\frac{q_o}{k\theta_o}$.

16. The fin according to claim 13, wherein the fin is substantially straight over its width dimension.

17. The fin according to claim 13, wherein the fin is solid.

18. The fin according to claim 13, wherein the fin is homogeneous.

19. The fin according to claim 13, wherein the fin is made from a material selected from

the group consisting of aluminum, copper, iron, nickel, magnesium, titanium, intermettalic alloys, refractory metals, ceramics, tool alloys, polymers, polymer composites, elastomers, epoxies, semi-conductors, glasses and metallic glasses.

20. The fin according to claim 13, wherein the thermal energy received in the base portion and dissipated from the outer surfaces of the first and second circular sides is dissipated to a fluid surrounding the circular sides.

21. A method of making a heat dissipating fin comprising the steps of:

(a) providing a material for forming a fin;

(b) forming a substantially flat base portion;

(c) forming a first arcuate side; and

(d) forming a second arcuate side;

wherein the base portion has a semi-height dimension, y_o, the first arcuate side and a second arcuate side have radius R and an arc length dimension S, and the fin has length dimension L, determined by the expressions $y_o = \frac{\rho}{\gamma}$, R = $\frac{1}{\gamma}$, $S = \frac{\sin^{-1}\rho}{\gamma}$, and $L = \frac{1}{\gamma}\left(1 - \sqrt{1-\rho^2}\right)$, wherein $\gamma = \frac{h}{k}$, and $\rho = \frac{q_o}{k\theta_o}$.

22. The method according to claim 21, further comprising the step of:

(e) attaching at least a portion of the fin to a heat source